

## CLAIMS

1. An image recognition apparatus for recognizing movements of players matched against each other between 5 domains partitioned with such an obstacle as net in a sport match or game from contents including a television program being telecasted to show the sport match or game, an image material in an uncompleted state for broadcasting and contents recorded in such a recording medium as a VTR, the image 10 recognition apparatus comprising: a score information obtaining section configured to obtain score information indicative of scores of the respective players which vary as the sport match or game proceeds; a play event information obtaining section configured to obtain play event information 15 indicative of a characteristic movement of each of the players from picture information included in the contents, the picture information containing images of respective of the obstacle and the players, the score information displayed on a screen, and like images; and an image substance recognizing section 20 configured to make a comparison between a score information item obtained immediately before a point in time of generation of the play event information and a score information item obtained immediately after the point in time and make reference to a result brought by the play event information, 25 thereby recognizing a substance of an image provided by the play event information.

2. The image recognition apparatus according to  
claim 1, wherein the score information obtaining section is  
configured to obtain the score information from at least one  
of the picture information included in the contents, sound  
5 information including commentary voice of a commentator, and  
data information transmitted as multiplexed on radio waves  
during broadcasting.

3. The image recognition apparatus according to  
claim 1 or 2, further comprising: a domain element extracting  
10 section configured to extract from the picture information  
facility information including information on the obstacle,  
information on the domains and information on boundary lines  
between the domains and an area outside the domains, player's  
position information indicative of a player's position, and  
15 instrument information on an instrument moving between the  
domains to serve as an object of score count in the sport  
match or game; rule information storage section configured to  
store rule information on the sport match or game; and basic  
movement storage section configured to store basic movement  
20 information on players' characteristic movements generalized  
in a sport of concern, wherein the play event information  
obtaining section includes a play event information  
determining section configured to determine a play event  
information item on a play event characteristic of each of the  
25 players included in the picture information as the play event  
information based on domain elements extracted from the

picture information, the rule information, and the basic movement information stored in the basic movement information storage section.

4. The image recognition apparatus according to  
5 claim 3, wherein the player's position information is position information indicative of a domain containing each of the players and the instrument constantly held and used by the player.

5. The image recognition apparatus according to  
10 claim 3 or 4, wherein the domain element extracting section is configured to extract the player's position information from the picture information based on the facility information extracted by the domain element extracting section.

6. The image recognition apparatus according to any  
15 one of claims 3 to 5, wherein the domain element extracting section is configured to extract the instrument information from the picture information based on the facility information and the player's position information extracted by the domain element extracting section.

20 7. The image recognition apparatus according to any  
one of claims 3 to 6, wherein the play event information obtaining section includes a play event index information output section configured to output plural play event information items determined by the play event information  
25 determining section as arranged in a time sequence.

8. The image recognition apparatus according to

claim 7, wherein the play event index information output section is configured to output the play event information items together with instrument information items in a time sequence.

5               9. The image recognition apparatus according to any one of claims 3 to 8, wherein the facility information, the player's position information, the instrument information and the rule information are based on knowledge about a sport as a subject for image extraction.

10              10. An image recognition program cooperative with a computer for causing an image recognition apparatus to operate to recognize movements of players matched against each other between domains partitioned with such an obstacle as net in a sport match or game from contents including a television program being telecasted to show the sport match or game, an image material in an uncompleted state for broadcasting and contents recorded in such a recording medium as a VTR, the image recognition program being configured to cause the image recognition apparatus to function as: a score information obtaining means configured to obtain score information indicative of scores of the respective players which vary as the sport match or game proceeds; a play event information obtaining means configured to obtain play event information indicative of a characteristic movement of each of the players 20              from picture information included in the contents, the picture information containing images of respective of the obstacle 25              25

and the players, the score information displayed on a screen, and like images; and an image substance recognizing means configured to make a comparison between a score information item obtained immediately before a point in time of generation 5 of the play event information and a score information item obtained immediately after the point in time and make reference to a result brought by the play event information, thereby recognizing image contents of the play event information.